

distad of the crossvein, the tips of the two branches are separated by a distance equal to seven-eighths of the maximum width of the wing; the anal vein is somewhat sinuate, its tip approaching and almost touching the posterior branch of the cubitus a little beyond the fork; anal angle strongly developed. Halteres yellow. Length 2 mm.

The *holotype* in the Cornell University collection was taken by Dr. J. C. Bradley at La Chorerra, Putumayo district, Peru, on August 17, 1920.

Three New Species of *Psilopus* from North America, and Notes on *caudatus* Wied. (Dipt.: Dolichopodidae).

By M. C. VAN DUZEE, Buffalo, New York.

Psilopus parvicauda new species.

♂: Length 3 mm., of female 4 mm. Face blue with white pollen, bare. Front green. Palpi small, black, with white hair; proboscis yellow. Antennæ black, small, second joint with two bristles below, which are about as long as the antenna; arista about as long as the head height.

Thorax and abdomen green; thorax, scutellum and base of abdomen with violet reflections, bristles and hairs black, hairs on the venter of abdomen mostly black. Hypopygium small; its lamellæ very small with short black hair.

Fore coxæ and all femora and tibiæ yellow, tips of posterior tibiæ black; middle and hind coxæ wholly black, anterior pair with a few white hairs on front surface and two black bristles near the tip; all femora with a few, long, white hairs below; fore tibiæ with three extremely small bristles on upper posterior edge; middle and hind ones with one bristle near basal third of upper surface. Fore and middle tarsi infuscated from tip of first joint, hind tarsi wholly black with a bristle below at base of first joint, apical joint very slightly widened; middle basitarsus with two or three spines below on apical half. Joints of fore tarsi as 41-12-9-6-5; of middle ones as 48-16-13-7-5; joints of posterior pair as 37-16-12-6-6. Calypters yellow with a black border and cilia; halteres yellow.

Wings grayish; last section of fourth vein with its fork at right angles, the part from the crossvein to the fork 27, from fork to wing margin 25-fiftieths of a millimeter long; crossvein 18, last section of fifth vein 16-fiftieths long.

♀: About as in the male; it has the last joint of posterior

tarsi slightly widened, the bristles of the legs as in the male, the violet reflections extend onto the front and to the tip of the abdomen.

Described from three specimens, which I took at Wainfleet, Ontario, July 20 & 26, 1924. *Type* and *allotype* in the author's collection.

***Psilopus graenicheri* new species.**

In addition to the characters given under *caudatus* below, the following points may help identify the species. Length 4-5 mm. Third antennal joint small, nearly round, not longer than wide, second joint with two bristles which are as long as the antenna, the others short; arista dorsal, as long as the eye height. Wing venation as in *caudatus* Wiedemann and *cockerelli* described below. Longest hairs at tip of hypopygium 83-fiftieths of a millimeter long. The male has on the middle basitarsi, besides the hooked spines below, a row of hairs or slender bristles on upper anterior edge, which are as long as the diameter of the joint; fore tibiae with two bristles on upper posterior edge and one on lower posterior edge, also two very small ones on posterior surface near the base; joints of fore tarsi as 48-14-12-7-6; of middle ones as 51-15-10-5-5; those of posterior pair as 42-20-12-7-7. Both male and female have on the posterior tibiae a rather long bristle at basal third of upper anterior surface and one a little smaller at apical third.

The female has three bristles above on fore tibiae, no bristles long enough to notice below; middle tibiae with one large bristle on upper anterior edge near basal third, one near the middle and a very small one near the base, below they have one before and one after the middle; joints of fore tarsi as 53-10-12-8-7; of middle ones as 47-26-15-8-7; joints of posterior pair as 52-21-15-9-9.

Described from ten males and sixteen females, all taken at Miami, Florida, in January, February and May, 1924, by S. Graenicher, after whom I take pleasure in naming the species.

Type and *allotype* in the Canadian National Collection.

***Psilopus cockerelli* new species.**

♂: Length 4 mm. Face green with blue reflections and long white hair; front shining green. Antennae black, second joint with two bristles below, which are as long as the antenna, third

joint small, not longer than wide; arista dorsal, as long as the height of the head.

Thorax green with blue reflections, its bristles moderately long; pleuræ dulled with white pollen. Abdomen green, second segment with blue reflections; fourth segment with the base purple then with a little brilliant coppery, the apical part more golden bronze; fifth of nearly the same color. Hypopygium as in *scobinator* Loew; the height of the apical end is 24-fiftieths of a millimeter, the longest hairs at tip are 16-fiftieths, its appendages very small.

Coxæ black, anterior pair more blue with long white hair; femora blue-green, their tips and the trochanters yellow, all femora with a row of white hairs below, which are not as long as their width. Tibiæ yellow, posterior pair black on apical fifth. Fore tarsi black from tip of first joint, hind tarsi wholly black; middle tibiæ with a long erect spur at tip, a row of four bristles on lower anterior edge of basal half and one bristle above at basal third, also one above near the tip; middle basitarsus with a row of hooked spines below and a row of nearly erect bristles above, which are as long as the width of the joint and a little bent at tip. Joints of fore tarsi as 54-15-11-5-6; those of middle ones as 47-17-14-8-5; joints of posterior pair as 46-19-15-7-8. Calypters yellow with a black edge and cilia; halteres yellow.

Wings grayish hyaline; cross-vein 26-fiftieths of a millimeter long; from the cross-vein to fork of fourth vein 40, from fork to wing margin 27, last segment of fifth vein 23-fiftieths of a millimeter; fork at nearly right angles to fourth vein, curved in a nearly regular arc to its tip.

Described from one male, given me by Prof. Cockerell and taken by him at Boulder, Colorado. *Type* in the author's collection.

This species looks very much like *scobinator* Loew; it differs from that species in having a row of slender, erect bristles on upper edge of middle basitarsus.

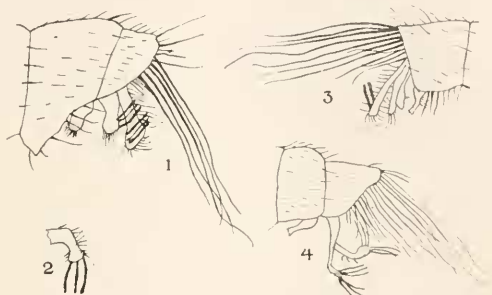
***Psilopus caudatus* Wiedemann and its allies.**

While in Ottawa in November, 1925, Mr. C. Howard Curran called my attention to a series of what seemed to be *caudatus*, taken at Miami, Florida; they differed in some respects from the ones taken in the north and also from Dr. Becker's drawing.

which, as I understand, was made from South American specimens.

These three forms agree in size, form and color; all have long hairs at tip of the abdomen and also have a pair of somewhat clubbed, hypopygial appendages; they also all have the long spur at tip of middle tibiae, the hooked bristles or spines on lower surface of middle basitarsus and conspicuous white hair on the face.

In all three forms there are finger-like formations at the tip of the hypopygial appendages; in the northern form there are two such fingers; in the Miami specimens there are three



DETAILS OF THE PSILOPUS CAUDATUS GROUP.

Fig. 1, Hypopygium of *Ps. graenicheri* new species. Fig. 2, Tip of the hypopygial appendage with its three finger-like projections, same species as the preceding. Fig. 3, Hypopygium of *Ps. caudatus* Wiedemann. Fig. 4, After Dr. Becker's drawing of *Ps. caudatus* Wied.; this is probably Wiedemann's South American species *smaragdulus*.

such fingers, this form I am calling *graenicheri*; Dr. Becker in his drawing shows two groups of three fingers to each appendage.

Wiedemann described *caudatus* from Georgia (Ausser-europäische Zweiflügelige Insekten, Vol. ii, p. 224, 1920); this is no doubt our northern form and the same that Dr. Loew described in 1864 as *caudatus* from Illinois and Missouri; I have seen specimens of this form from several of the northern states and Ontario, also from Georgia, Bradentown, Florida, and Utah Lake, near Lehi, Utah, all of these agree in having only two fingers to each appendage (Figure 3). If Dr. Becker's drawing was made from a South American specimen, as I suppose

it may have been, it probably is *smaragdulus* Wiedemann, described from South America on the page following the description of *caudatus*; it differs from both of the other forms in having two groups of three fingers to each appendage (Figure 4); the Miami, Florida, specimens in the Canadian National collection have three fingers to each appendage (Figures 1 and 3).

Both North American species (*caudatus* and *gracnicheri*) have long bristles on the venter of the last two segments of the abdomen in both male and female; white hair on lower surface of all femora; fore coxæ with white hair and two black bristles, one at apical third and one near the tip; fore and middle femora each with several black bristle-like hairs near the tip, those on anterior pair on posterior surface and those on middle ones on anterior surface; posterior femora with one preapical bristle, and posterior basitarsi with a bristle at base below in both sexes.

***Psilopus caudatus* Wiedemann.**

The male has one bristle on fore tibiæ at basal fourth of upper anterior edge and three on upper posterior edge, all very small; middle tibiæ with one large bristle near basal third of upper anterior edge, one or two smaller ones near apical third of upper posterior edge and three slender ones on lower anterior edge of basal half. In the female the fore tibiæ have two bristles on lower posterior edge, one near the middle and one near the base, also one above near basal fourth; middle tibiæ with two bristles on upper anterior edge, a large one at basal third and one at apical third, also one near the middle of upper posterior edge; below they have one pair near the middle and sometimes a very small pair beyond these.

Both male and female have one large bristle near basal third of upper posterior edge, but none near apical third as found in the male of *gracnicheri*. Joints of fore tarsi of the male as 44-14-11-7-6; of middle ones as 48-18-13-8-6; those of posterior pair as 42-19-13-7-7, the two apical joints are scarcely widened. Joints of fore tarsi of female as 37-15-12-6-5; of middle ones as 48-19-14-7-6; those of posterior pair as 40-19-8-5-6. The longest hairs at tip of hypopygium are 57-fiftieths of a millimeter long.